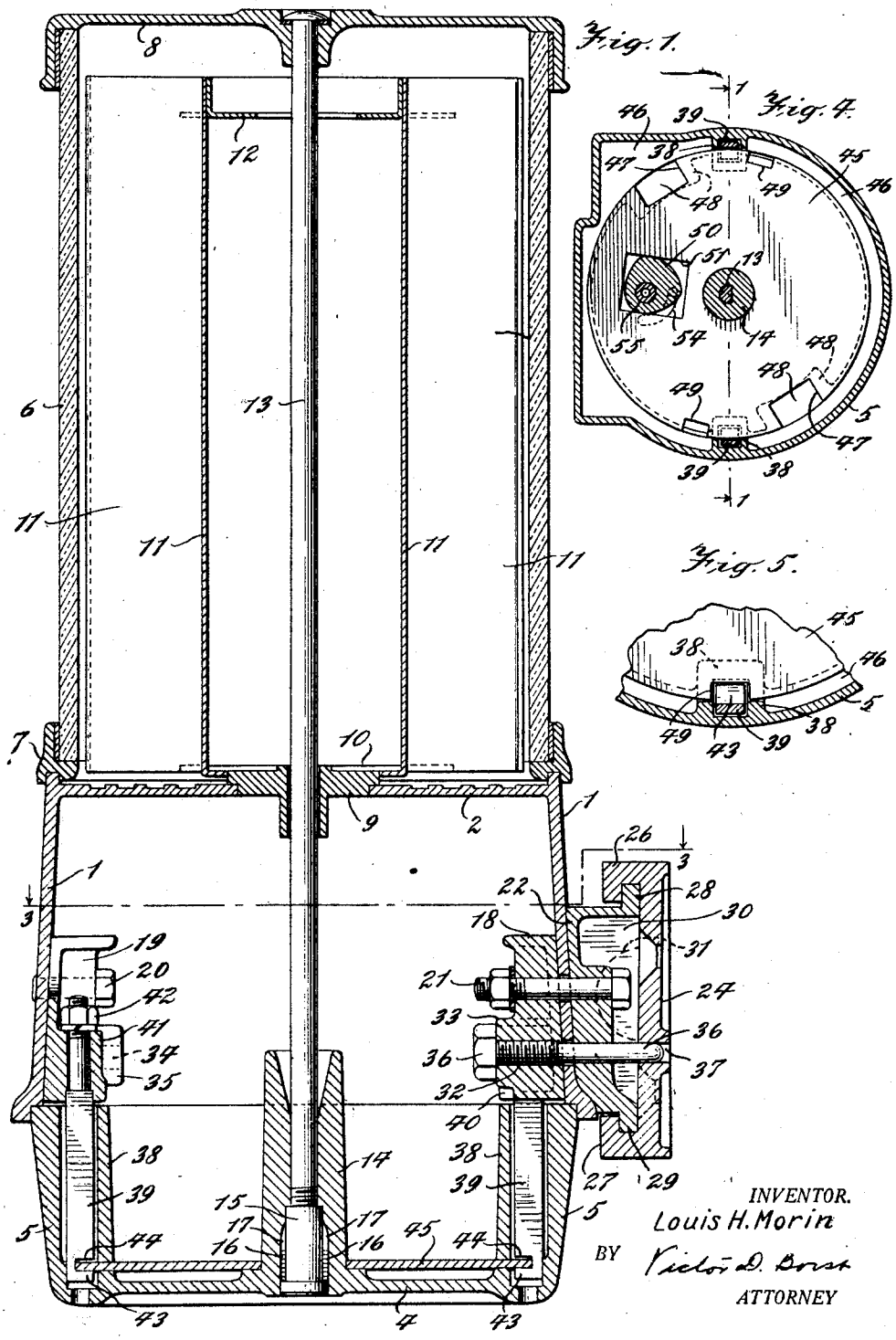
Sept. 11, 1928. 1,683,722

L. H. MORIN

VENDING MACHINE

Filed Feb. 15, 1927 3 Sheets-Sheet 1



Sept. 11, 1928. 1,683,722

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VENDING MACHINE

Filed Feb. 15, 1927 3 Sheets-Sheet 2

Fig. 2.

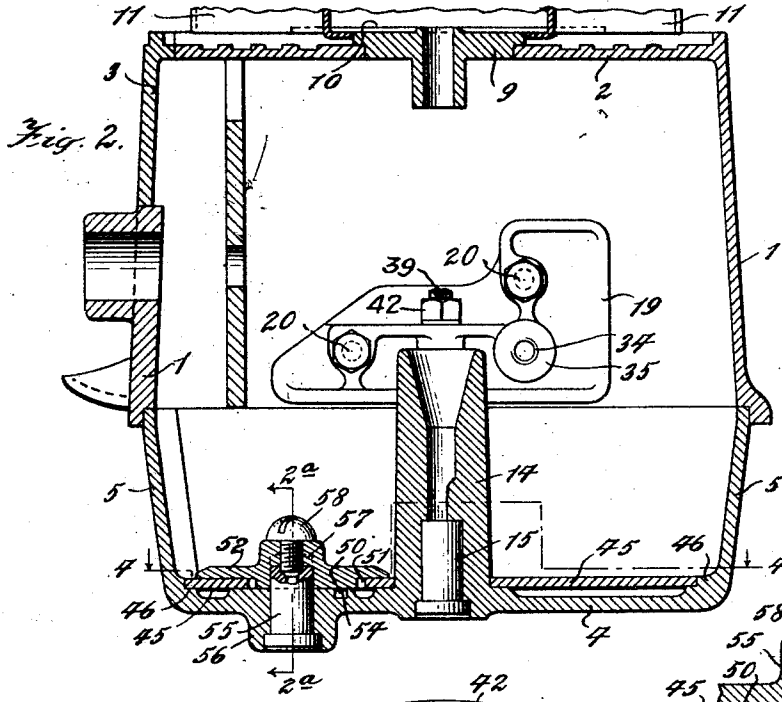


Fig. 2a.

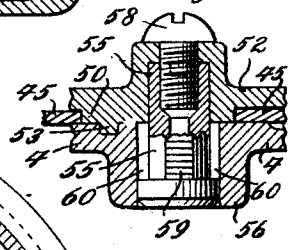
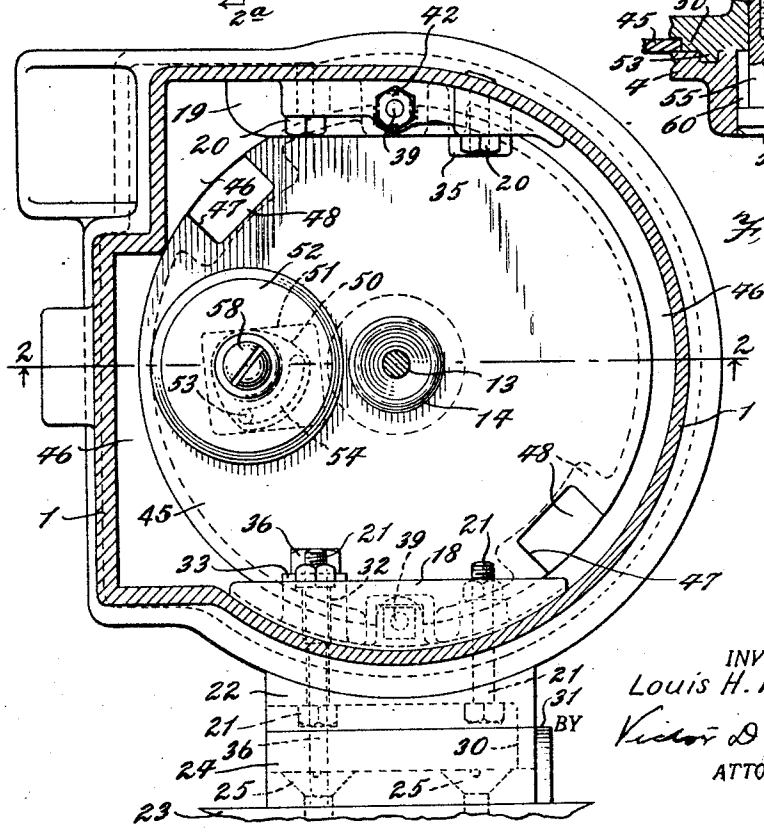


Fig. 3.



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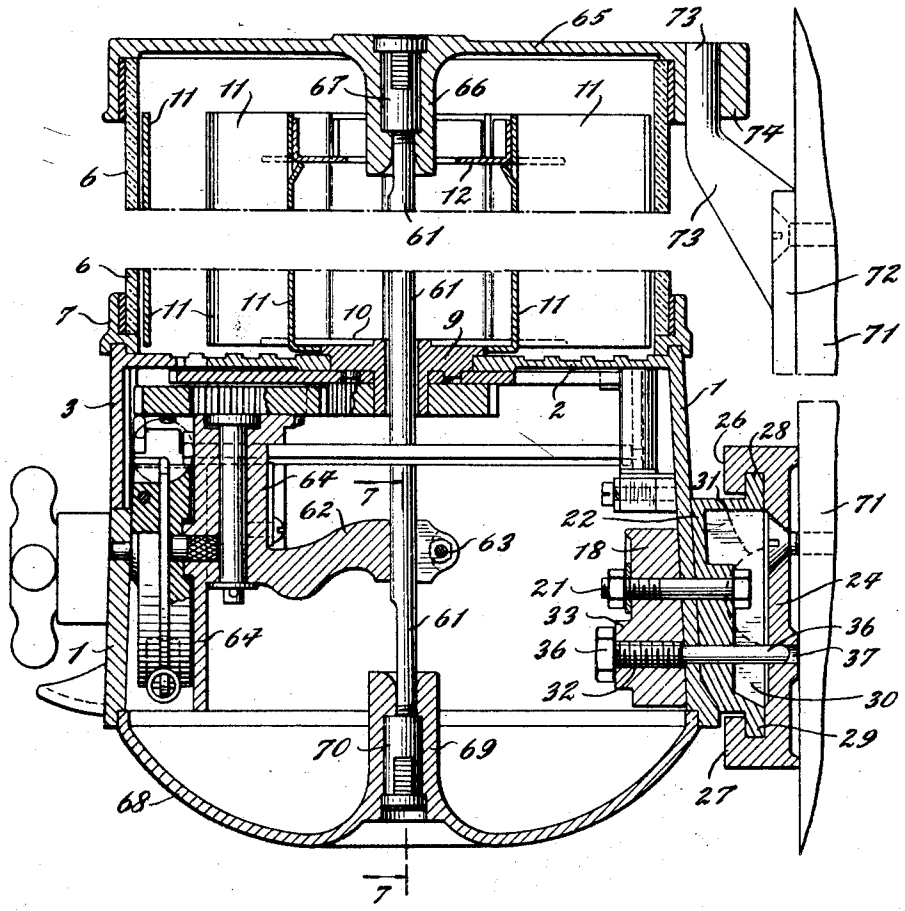
Sept. 11, 1928. 1,683,722

L. H. MORIN

VENDING MACHINE

Filed Feb. 15, 1927 3 Sheets-Sheet 3

Fig. 6.



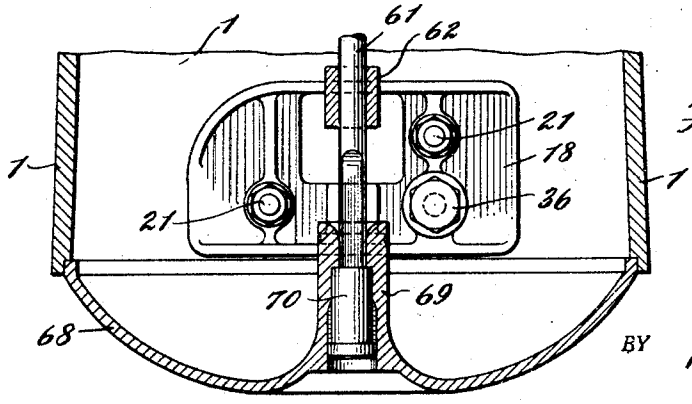


Fig. 7.

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Patented Sept. 11, 1928. 1,683,722

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VENDING MACHINE.

Application filed February 15, 1927. Serial No. 168,300.

A considerable number of similar vending machines are commonly located in more or less adjacent but scattered relation over an area or territory, also often in segregated relation along a line of public travel, and with such vending machines it has been found desirable for a number of reasons, including convenience and the saving of time over a route comprising such machines, to have the work of replenishing the magazines of these machines performed as one operation and to have the work of collecting the coins from the machines performed as a separate and distinct operation, and usually by a different person. In such case it is desirable to make the person who collects the coins individually responsible therefor, and to relieve the person who replenishes the magazines from responsibility relative to the collection of the coins, and that is one of the objects of this invention. Commonly such machines are detachably secured and locked to a support, such as a wall bracket, against unauthorized removal, thereby to prevent the theft of the entire machine, and another object in carrying out the invention is to improve such locked securing device for the machine and to make it dependent upon and subject to the security provided for the coins, and, more particularly, to combine such device with a locking device which affords security to the accumulated coins. Other objects and advantages of the invention will hereinafter appear.

In carrying out the invention it has been embodied in a vending machine which in other respects is substantially of the same construction as that disclosed in my prior copending application for patent Serial No. 39,442, filed June 25, 1925, and the present invention relates more particularly to features of improvement embodied in the casing construction of a vending machine of that general type. Therefore, so far as the present invention is concerned and in carrying out this invention in a vending machine of this commonly used general type, the operating features, including the coin controlled mechanism and the delivery or vending mechanism, may be of any desired construction which is suited to the general type of vending machine casing in which the present invention is embodied. In a commonly used vending machine of this type, for example such as is disclosed in my above noted prior application for patent, a strong base part or lower casing section forms a chamber in which the coins are received and which also contains the coin controlled mechanism, and an upright magazine chamber is formed by an upper casing part superimposed upon this lower casing part and separately secured thereto so as to be readily removable therefrom, thus to open the magazine chamber for replenishing the stock of articles to be vended. In such machines the casing base part is closed at its top to form thereby a bottom for the magazine chamber and is provided at its lower end with a bottom closure to open downwardly, commonly being removable, and which forms a money pan to receive the accumulated coins. Commonly heretofore in this type of vending machine when the magazine chamber is opened access may be freely had to the coin chamber with its accumulated coins.

According to the present invention and as carried out in the type of vending machine above noted, novel or improved securing means are provided to prevent unauthorized access to the coin chamber when the magazine chamber is unlocked and opened by a person who is authorized only to replenish the magazine and a distinctly separate authorization is required in order to obtain access to the coin chamber, for example, by including in such means locks which require different keys for the respective locks. For this purpose and in accordance with the invention the money pan is provided with securing means individual thereto and including a lock which prevents unauthorized access to the coin chamber. Also according to the invention, for preventing the unauthorized removal of the machine from its wall bracket, with which it has a detachable connection, manually releasable locking or securing means are provided which can be released or disengaged only by unlocking and opening the bottom closure or money pan. More particularly such means comprise a locking device carried by the side wall of the casing base part or coin chamber to have locking engagement with the wall bracket and which is accessible to be disengaged therefrom only from within the coin chamber after this chamber has been opened by unlocking the money pan. The invention further includes various features of construction and combinations of parts,

as will appear from the following description.

The two somewhat different constructions in which the invention has been embodied as shown in the accompanying drawings will now be described and thereafter the invention will be pointed out in claims, reference now being had to the drawings, in which:

Fig. 1 is a central vertical section in a plane extending laterally between the front and rear of a vending machine embodying the invention, the coin controlled mechanism and parts of the vending mechanism being omitted;

Fig. 2 is a similar vertical section of the lower part of the machine in a plane extending from the front to the rear of the machine on the line 2—2 of Fig. 3, and shows the money pan of the coin chamber as having been unlocked and that the magazine chamber has been unlocked and removed;

Fig. 2^a is an enlarged partial vertical section on the line 2^a—2^a of Fig. 2.

Fig. 3 is a horizontal section substantially on the line 3—3 of Fig. 1, but with the money pan in the unlocked condition and with parts omitted to give a clear view of the inside of the money pan;

Fig. 4 (Sheet 1) is a reduced horizontal section on the zig-zag line 4—4 of Fig. 2, but showing the locked condition of the money pan as shown in Fig. 1;

Fig. 5 is a similar but partial horizontal section showing the money pan in the unlocked condition appearing in Fig. 3;

Fig. 6 is for the most part a central vertical section on a plane extending from front to rear of a vending machine embodying the invention in a somewhat different construction, parts of the coin controlled mechanism and of the vending mechanism being shown and the middle part of the magazine chamber being broken out as indicated by the broken parallel lines;

Fig. 7 is a partial central vertical section on the line 7—7 of Fig. 6.

The vending machine construction by which the invention is carried out according to the embodiment thereof illustrated in Figs 1 to 5 inclusive of the accompanying drawings will first be particularly described after which a particular description will be given of the somewhat modified embodiment of the invention shown in Figs. 6 and 7. However, it may be here noted that the vending machine shown in Figs. 1 to 5 inclusive and that shown in Figs 6 and 7 are of similar general construction throughout excepting in the respect and to the extent of the changes or modification in construction which relate to the present invention. Excepting as to improvements made by the present invention, the general construction of both machines shown in the drawings is substantially the same as that disclosed in my hereinbefore mentioned prior application for patent, in regard to both the enclosing casing construction and the coin controlled and vending mechanisms therein. It is to be understood that the coin controlled mechanism, parts of which are shown in Fig. 6, is to be considered as likewise similarly embodied in the vending machine shown in Figs. 1 to 5 inclusive and that the construction of the vending mechanism, parts of which are shown in Fig. 6 and also to a somewhat less extent in Fig. 1, is substantially the same in both of the machines shown in the drawings. In regard to the present invention, it may be noted that the manually releasable means for detachably securing and locking the machine to its wall bracket are of the same construction in both of the machines shown in the drawings.

Referring now more particularly to Figs. 1 to 5 inclusive, in the vending machine there shown a strong and rigid casing base part or section, which may be a suitable casting, forms a coin chamber and also contains the coin controlled operating mechanism (see Fig. 6). This lower casing part or casing base includes an enclosing side wall 1, open at its lower end and closed at its upper end by a flat top wall 2, and this casing base may also include other parts or features which, for clarity of illustration, are not all shown, such as a forwardly located partition wall (Fig. 2) to support and form a compartment for the coin controlled mechanism (Fig. 6). The side wall 1 is shown as slightly tapering upwardly and as for the most part circular (Fig. 3) and is shown as provided with a forwardly projecting flat portion which adjacent the lower end is circumferentially continuous with the circular portion An upwardly removable front slide 3, provided at its top with an inner flange, may be guided in the main wall part 1. A removable money pan forms a downwardly opening bottom closure for the lower end of the coin chamber and is shown as cast in one piece to have a flat bottom 4, and a slightly upwardly flaring side wall 5, which fits within the lower end of the coin chamber side wall 1 and abuts against a shoulder formed thereon, so that coins set free in the coin chamber by the coin controlled mechanism drop into this money pan, which is normally supported and locked in closed condition by means involving the present invention and presently to be described.

An upright upper magazine casing part closed at its top is removably supported upon and closed at its bottom by the closed upper end of the coin chamber thus to form a closed magazine chamber. A thick glass cylinder 6 forms an enclosing side wall for the magazine chamber, a protecting metal ring 7 is shown as surrounding and flanged under the lower end of this cylinder and the top

of the cylinder is closed by a strong metal cover 8 flanged over the upper end thereof. The lower ring 7 and the top closure 8 may be castings, and are shown as secured to the glass cylinder 6 by means of a suitable adhesive so that thereby the entire magazine casing part or section may be lifted off as a unit for replenishing the magazine, although so far as the present invention is concerned this upper casing part could be entirely of metal or could be made up of separable parts. In the construction shown, the ring 7 on its lower side is flanged to form a groove which fits over a bead provided as an upward extension of the base wall 1 and along the upper edge of the removable slide 3 which it thus holds in place. The flat top wall 2 of the coin chamber forms a bottom closure or floor for the magazine chamber.

For reasons which will presently appear it is desirable to describe briefly the parts of the vending mechanism which appear in Fig. 1 and which also appear in Fig. 6, together with parts of the coin controlled mechanism. The intermediate plate 2 has centrally therein a rather large aperture in which is journaled the lower reduced and shouldered portion of a rather thick rotatable disc 9 having a central bore and provided as shown with a long lower boss and with a short upper boss over which fits a plate 10 to be rotated by the disc. The lower ends of vertical strips 11, forming wings, are secured to the plate 10 and the upper ends of these strips are tied together by a centrally apertured upper plate 12. These strips 11 and the plates 10 and 12 may be formed of suitable sheet metal. Articles or packages to be vended, such as packages of chewing gum, are to be contained in the channels formed by the strips 11, to rest upon the magazine bottom 2 and to be carried around thereon for effecting their delivery.

In the construction shown, the money pan and the magazine part of the casing are firmly secured together and to the coil receiving chamber or casing base part by means of a central locking shaft or tie rod 13 which normally firmly but releasably ties together the bottom 4 of the money pan and the top 8 of the magazine. This tie rod is shown as headed above the magazine top 8 and passes downward freely and loosely through the bore in the rotatable disc 9 into the bore of a tubular upstanding boss 14 which is cast on the inner side of the bottom 4 of the money pan centrally thereof. A suitable lock operable only by an authorized person is provided for releasably engaging the lower end of the tie rod 13 which together with the bore in the base 14 is shown as flattened on one side and such lock may be a key-operated lock with its locking mechanism of standard commercial construction. The lock shown has an outer cylindrical rotatable part or barrel 15 seated and journaled in a lower downwardly opening shoulder-forming enlargement of the bore through the central boss 14 and money pan bottom 4, as shown in the drawings, so that this lock is accessible for locking and unlocking from beneath the money pan. This lock has usual lock bolts 16 to project from its barrel 15 and which may be withdrawn in the usual way by means of a suitable key, whereupon by means of the key the lock barrel 15 may be rotated for thereby effecting locking engagement with or unlocking disengagement from the lower end of the tie rod 13, these lock bolts 16 in their projected position, shown in Fig. 1, engaging in grooves 17 formed in the enlarged portion of the bore in the boss 14, it being noted of Fig. 2 that by reason of the unlocked condition and the section there taken, neither the lock bolts 16 nor the keeper grooves therefor appear. When this lock is in the unlocked condition the entire magazine casing part, carrying with it the locking shaft or tie rod 13 may be lifted off, as shown in Fig. 2, for replenishing the magazine, after which this magazine casing part together with the tie rod 13 may be replaced in a similar manner, the upper end of the bore in the boss 14 being shown as flaring for the easy entrance therein of the lower end of the rod 13.

In this embodiment of the invention, so far as it has been described, it will be noted that the above described locking means lock the magazine chamber against unauthorized access and also similarly lock the money pan of the coin chamber, so that thus not only will the person whose duty it is to replenish the magazine carry a key for the above described locking device, but also the person whose duty it is to collect the accumulated coins will carry a duplicate key for the same lock. The vending machine construction as so far described, excepting as to features of the money pan and its locked releasability from the tie rod, does not differ greatly from the vending machine disclosed in my above noted prior application for patent, and the features of improvement more particularly relating to the present invention will now be described.

Before proceeding further it may be noted that the vending machine shown in the drawings is intended to be supported from the side wall 1 of the casing base by means of a wall bracket construction, thereby to provide for the downward opening and removal of the money pan with the coins contained therein, and the bracket construction employed for this purpose embodies features having a cooperating relation in the present invention, as will hereinafter ap-

pear. In accordance with the invention, further releasable securing and locking means are provided for the money pan which can be unlocked and released only by a person who is authorized to collect the coins from the machine, such means being also effective to prevent the unauthorized removal of the machine from the wall bracket which forms a support therefor.

In carrying out the invention in the embodiment thereof shown in the drawings a pair of substantially similar right and left reinforcing brackets 18 and 19, respectively, are firmly secured to the casing base wall 1 at the inner side thereof and adjacent its lower end. These two brackets are capable of serving like functions but are of somewhat different shape for fitting the different contour of the wall 1 at the opposite sides of the machine. The left hand reinforcing bracket 19 is fixed in place by means of a pair of similar screw bolts 20 which pass from the inside through the bracket 19 and are screwed through the wall 1 where they may desirably have their outer ends upset or riveted as shown in Figs. 1 and 3. The right hand reinforcing bracket 18 is similarly fixed in place by means of a pair of machine bolts 21 having their nuts at the inner side of this bracket and which from their outer heads pass inwardly freely through an outer base bracket 22 and extend likewise freely inward through the wall 1 and reinforcing bracket 18, for thereby firmly securing this reinforcing bracket and the base bracket together and to the wall 1.

The entire machine may be rigidly but removably supported upon any convenient wall or the like 23 (Fig. 3) by means of a suitable wall bracket 24 which is shown as firmly mounted on the wall 23 by means of countersunk attaching screws 25 of which any suitable number may be employed and which pass through a flat body or plate portion of this bracket and into the wall 23. In the bracket construction shown the wall bracket 24 has upper and lower oppositely directed gibs 26 and 27 providing a horizontal guideway in which upper and lower flanges 28 and 29 on the base bracket 22 may be removably received with a snug sliding fit and be held against angular movement. The base bracket 22 is strengthened by means of a vertical wall 30 extending between its upper and lower flanges at one end thereof and which also forms a stop to abut against a stop lug 31 which projects from the wall bracket 24 at the adjacent end of its guideway and which limits the sliding movement of the base bracket 22 in one direction in the wall bracket 24 and enables the base bracket to be quickly and conveniently slid into position on the wall bracket.

The reinforcing brackets 18 and 19 are embodied in and form cooperating parts of the means for individually locking the money pan in closed condition and also these reinforcing brackets are embodied in and form cooperating parts of means to prevent the removal of the machine from the wall bracket 24 until the individual locking device for the money pan has been released or disengaged by the unlocking of an individual money pan lock, as will presently be described, but first the means provided according to this invention as a feature thereof for preventing the unauthorized removal of the machine from its wall bracket 24 will be described.

In the illustrated construction the right-hand reinforcing bracket 18 has provided therein adjacent its forward end and lower margin a screw threaded aperture 32, this aperture passing through a thick portion of the bracket which is shown as further thickened by means of an inwardly projecting boss 33, and the left hand reinforcing bracket 19 is similarly provided adjacent its rear end and lower margin with a similar screw threaded aperture 34, the thickness of this bracket at this point being increased by means of an inner boss 35.

The particular machine shown in the drawings is supported from its right side on the wall 23, as shown in Figure 3, and this right side of the machine, which appears at the bottom of Fig. 3, is shown at the right hand side of Fig 1. The machine is locked against the unauthorized disengagement of the base bracket 22 from the wall bracket 24 by means of an inwardly headed screw threaded locking pin 36 which adjacent its head screws into the aperture 32 through the reinforcing bracket 18, this locking pin having a somewhat reduced smooth outer end portion which projects outwardly through aligned apertures in the casing base wall 1 and in the base bracket 22, beyond which this pin projects so that normally the outer end portion of this locking pin 36 snugly engages in a socket-forming hole 37 provided through the flat base or body portion of the wall bracket 24, thereby normally preventing the base bracket 22 from being slid out of the wall bracket 24. When it is desired to remove the machine from the wall bracket 24 the locking pin 36 is screwed out of the reinforcing bracket 18 sufficiently to withdraw the outer end of this pin from the socket hole 37 in the wall bracket 24, whereupon the base bracket 22 may be freely slid out of the wall bracket 24.

In mounting the machine on its wall bracket 24, when the base bracket 22 is slid into the wall bracket with its strengthening web or stop wall 30 abutting against the stop lug 31 of the wall bracket, the outer rounded end of the locking pin 36 comes into alignment with the socket hole 37 in the wall bracket, and is brought into engagement

with the wall bracket by screwing the locking pin 36 outward so that the outer end thereof will then enter the socket 37, as shown most clearly in Fig. 1. By reason of the fact that the head of the screw threaded locking pin 36 is within the coin chamber it becomes obvious that this pin cannot be disengaged from the wall bracket without first unlocking and opening the bottom closure of the coin chamber which is formed by the money pan, thereby preventing unauthorized removal of the machine from the wall bracket 24 and rendering such removal dependent upon the locking means for the money pan.

Vending machines of the type in which this invention has been embodied are commonly supported either from the right or the left side thereof or from the back thereof. Vending machines of this general type have commonly been mounted upon and supported by either the right or the left side wall of a weighing machine or scale, so that thereby the front of the vending machine will be directed towards the front of the weighing machine, and the supporting wall 23 may be considered as the left hand wall of a weighing machine. The vending machine shown in the drawings may be supported equally well either from its right side upon a left hand wall, as shown, or from its left side upon a right hand wall, without necessitating any change in the construction shown.

For thus supporting the vending machine from its left side the base bracket 22 is simply transferred to the opposite or left side of the machine immediately outward from the left hand reinforcing bracket 19 and is there secured in place by means of the same machine bolts 21 which are then transferred to that side of the machine, while the screw bolts 20 are similarly transferred from the left to the right side of the machine for then securing in place the right hand reinforcing bracket 18. Likewise the screw threaded longitudinally movable locking pin 36 is removed from the right hand reinforcing bracket 18 and transferred to the left hand reinforcing bracket 19, where it is screwed into the screw threaded aperture 34 through this latter bracket, passing thence through the side wall 1 and the base bracket 22 for locking engagement with or disengagement from the wall bracket 24 in the same way as at the right hand side of the machine, as above described.

It will thus be seen that the base bracket 22 and the locking pin 36 may cooperate interchangeably with the respective reinforcing brackets 18 and 19. Also it becomes manifest that these reinforcing brackets are homologous in that in the above noted respect, as well as in others hereinafter to be described, they may have like functions.

An inner face view of the left hand reinforcing bracket 19 appears in Fig. 2, while a similar view of the right hand reinforcing bracket, 18 may be seen in Fig. 7, where the construction in other respects, but not as to this bracket is somewhat modified, as will presently be described. Should it be desired for any reason to support the vending machine shown in Figs. 1 to 5 inclusive from its back, in that respect similar to what is shown in Fig. 6, this may be accomplished merely by installing a second reinforcing bracket like the right hand bracket 18 within the coin chamber there to cooperate in a similar manner with the base bracket 22, locking pin 36 and wall bracket 24, the two reinforcing brackets 18 and 19 then still remaining in place, the right hand bracket 18 then being secured in place by means of screw bolts similar to the screw bolts 20 for the left hand reinforcing bracket 19, in such case the reinforcing brackets 18 and 19 continuing to serve their further function as a feature of the releasable securing means for removably holding the money pan in locked condition on the coin chamber against unauthorized access thereto, by reason of which the unauthorized removal of the machine from its wall bracket is prevented. The features relating to the means for releasably holding and individually locking the money pan in place will now be described.

In the construction shown the money pan, at diametrically opposite points on the inner side of its side wall 5 and shown as forming a part of the same casting, is provided with a pair of pockets 38 providing deep vertical sockets which extend from the top of the money pan down to its bottom 4, as shown in Fig. 1. The respective reinforcing brackets 18 and 19 rigidly carry downwardly projecting keeper studs or lock studs 39. Each of these keeper studs 39 is squared and shouldered into the lower side of its reinforcing bracket to prevent rotative movement of the stud while its shoulder serves as a head, above which the stud is cylindrically reduced and, for the right hand stud, passes upwardly through a lower shelf or boss 40 on the right hand reinforcing brackets 18 and for the left hand stud, through a similar shelf or boss 41 on the left hand reinforcing bracket 19, the upper end of each of these studs which projects above such shelf being screw threaded and provided with a nut 42 by which such stud is firmly secured in position on its reinforcing bracket. The lower squared portion of each of the lock studs 39 extends downward within its socket 38 to a point adjacent the bottom 4 of the money pan. The lower end of each keeper stud, on its inner side, is provided with an abrupt upwardly directed shoulder or keeper abutment 43 which is shown as formed by means of a deep square-

shouldered notch 44 in the keeper stud. The two reinforcing brackets 18 and 19, the base bracket 22 and the wall bracket 24 may be suitable castings which afford adequate strength and rigidity.

A horizontally rotatable securing and locking member shown as a locking disc 45, which forms an inner flat bottom or floor within the money pan just above its bottom 4, is centrally pivoted upon the central upstanding boss 14 to rest upon a low annular shoulder shown as surrounding the base of this boss. The circular peripheral margin of this disc rests in a circular groove or notch shown as provided in a thickened portion or rib 46 which extends around the margin of the money pan bottom 4, so that the upper or inner surface of this disc is flush with the upper surface of this inner rib 46, as appears in Fig. 2. This disc 45 is shown as provided with two diametrically opposite large peripheral notches 47, thereby to enable this disc, in effecting the assembly, to be put in place down past the socket-forming pockets 38, as will be readily understood. To prevent the possibility of coins getting beneath the disc 45, the money pan rib 46 is provided with a pair of inwardly extending ribs 48 which form bottom closures for the large openings 47, in both the locked and unlocked rotative positions of the locking disc 45, as is shown for the unlocked position in Fig. 3 and for the locked position in Fig. 4.

The circular periphery of the locking disc or plate 45 enters the sockets formed by the pockets 38 through inner slots in these pockets (Fig. 1, 4 and 5) there, in the locked condition of the money pan shown in Figs. 1 and 4, substantially fully to enter the lock stud notches 44 and thus to have locking engagement above the keeper abutments 43 provided by these notches. The locking disc 45 is restrained against upward movement relative to the money pan by reason of its engagement in the above disc-receiving slots in the socket pockets 38, it being noted that the locked disc 45 is thus restrained in close proximity to the keeper stud 39 (Fig. 1), thereby firmly and securely to support the money pan in its locked condition upon the bottom of the coin chamber. The periphery of the locking disc 45 has therein a pair of diametrically opposite unlocking or stud-releasing notches 49 which, when rotative movement of the locking disc 45 brings them into alignment with the lock studs 39, will disengage the locking disc 45 from the keeper abutments 43 and thereby release the money pan from the coin chamber, in so far as this securing device is concerned.

A device including a lock operable only by an authorized person is provided for imparting rotative locking and unlocking movements to the locking disc 45 and will now be described. In the construction shown for carrying out the invention a rotatable cam 50, pivoting on a vertical axis and having a peripheral cam face of the proper contour, engages the locking disc 45 within a cam opening 51 therein, the cam engaging the opposite sides of this opening, for thereby imparting locking and unlocking rotative movement to the locking disc 45 when the cam 50 is rotated. The lower face of this cam is flush with the lower face of the locking disc 45 and rests upon a slight boss or raised portion on the money pan bottom such boss also forming a guide for the lower side of the locking disc 45 at this point. At its upper side the cam 50 is provided with a flange 52 which overlies and guides the locking disc 45 and which also forms a cover for the cam opening 51 therein. In the construction shown, the rotative disc-operating movements of the cam 50 are limited to about ninety degrees by means of a downwardly projecting stud 53 on the cam which works in an arcuate slot 54 provided in the raised portion of the money pan bottom 4 (Figs. 2, 2ª and 3). When the cam 50 is rotated or rocked in a clockwise direction, as viewed from the inside from the position of this cam shown in Fig. 4 to the dotted line position thereof shown in Fig. 3, this cam 50 will then rotate or rock the disc 45 in the opposite or counter-clockwise direction, from the locking or securing position thereof shown in Figs. 1 and 4 to the unlocking position thereof shown in Figs. 3 and 5, thereby disengaging this disc from the keeper studs 39. A reverse movement of this cam will impart a reverse movement to the disc 45, to rotate it back again into engagement with these keeper studs, as shown in Figs. 1 and 4. This cam 50 thus forms an operating member for the securing member or locking disc 45.

The disc-operating cam 50 is carried and operated by the rotatable barrel or cylinder 55 of a key-operated lock, this lock barrel passing upwardly through the money pan bottom 4 and being outwardly shouldered and journaled in a lower boss 56 formed thereon. The cam 50 is fitted over the inner upwardly projecting end of the lock barrel 55 and is locked thereto to be rotated thereby by means of a diametral ridge 57 on the cam seated in a groove in the end of the lock barrel, and the cam 50 is firmly secured in place upon the inner end of the lock barrel 55 by means of an axial screw 58 screwed into the inner end of the lock barrel. The locking mechanism of the lock having the barrel or cylinder 55, may be of any suitable or of standard commercial construction, and this lock is shown as having usual lock bolts 59 to engage in grooves 60 formed in the bore of the boss 56, thereby to lock the cam 50 and thus to lock the lock-

ing disc 45 at the position shown in Figs. 1 and 4, in which the money pan is locked thereby. The lock bolts 59 may be withdrawn by means of a proper key and then this key may be employed to rotate the lock barrel 55, thereby to unlock and release the money pan, in so far as this lock is concerned, the unlocked condition of this lock appearing most clearly in Fig. 2a.

It will be evident that the above described embodiment of the invention provides increased security against unauthorized access to the coin chamber for the removal of the accumulated coins, or for the removal and carrying away of the vending machine as a whole together with its contained coins and packages of goods to be vended. The person whose business it is to replenish the magazine is provided with a key only for the lock of the above described securing and locking device which gives access to the magazine chamber only, while the person whose business it is to collect the coins, or to remove the entire machine from its support, carries two keys, one for each of the two locks of the two securing and locking devices. A key like that carried by the person who replenishes the magazine will not unlock the lock which gives access to the coin chamber.

The modified embodiment of the invention shown in Figs. 6 and 7 will now be described. For the sake of clarity the unmodified features and parts of the vending machine there shown and which are also shown in Figs. 1 to 5 inclusive have been given the same reference numerals as in the preceding figures and additional reference numerals have only been employed to designate those features and parts which have been more or less modified or changed in construction. In this embodiment of the invention a locking shaft or tie rod 61, which extends vertically through the machine between its upper and lower ends, is fixedly secured in place in the machine by means of a fixed bracket 62 located within the coin chamber and provided with a split clamp bearing within which the tie rod 61 is firmly clamped and gripped by a clamping bolt 63.

The bracket 62 is shown as projecting rearwardly from an inwardly fixed portion of a forwardly located vertical partition wall 64 and as formed in one piece therewith and this partition wall together with the bracket 62 may be cast in one piece with the side wall 1 and top wall 2 of the coin chamber or it may be otherwise firmly and rigidly secured therein so far as the invention is concerned. This partition wall forms a forward compartment to contain the coin controlled mechanism and also supports and provides bearings for parts thereof, as is shown in Fig. 6. The top closure 65 of the upper removable casing part forming the magazine chamber is provided on its inner or lower side centrally thereof with a tubular boss 66 within which the upper flattened end of the tie rod 61 is releasably engaged and locked by a suitable key-operated lock 67 which may be similar in construction and operation to the lock per se shown for the lower end of the tie rod 13 in the first described vending machine. This lock 67 is seated in an outer enlarged portion of the bore of the tubular boss 66 and exposed for operation at the top of the magazine cover 65. The removable money pan 68, which forms a closure for the lower end of the casing wall 1 of the coin chamber, is provided with a central upstanding tubular boss 69 within which the lower flattened end of the tie rod 61 is releasably engaged and locked by a key-operated lock 70, the barrel or cylinder of which is seated in a lower enlarged portion of the bore of the boss 69 with the lower end of the lock exposed below the money pan 68 for operation of the lock. This lock for the money pan may be similar in its general mechanism to the upper lock 67 for the magazine, but having its locking mechanism so constructed or arranged that different keys are required for each of these two locks.

The person who is authorized to replenish the magazine has a key for the magazine lock 67 only, so that, by reason of the secure holding or fixing of the tie rod 61 against removal without access to the locked coin chamber, he is unable to gain access to the latter chamber, while the person who is authorized to collect the accumulated coins is provided with a key for the money pan lock. Also the coin collector may be provided with another key for the magazine lock 67, if so desired.

This machine is shown as supported from the rear of the coin chamber base wall 1 upon a wall or the like 71, which may be a wall or similar structure of a building, and in order to detach or remove the machine as a whole access must first be had to the individually locked coin chamber. To prevent the unauthorized removal of the machine the same supporting bracket construction, together with its locking device, is shown as employed that has already been described with reference to Figs. 1 to 5 inclusive, and therefore such description need not be repeated, it being only necessary to leave off from the reinforcing bracket 18 the separable depending keeper stud 39.

While the particular vending machine shown in the drawings is shown as supported at the rear thereof it is obvious that it could equally well be supported from some other point around the wall 1, such as from the left or right side thereof, in order thereby to have the front of the vending machine

in a convenient position where such machine is to be mounted upon one of the side walls of a weighing machine, for example.

It may be noted, and as hereinbefore mentioned, that the parts of the vending mechanism and of the coin controlled mechanism shown in Fig. 6 may be considered as likewise to be employed in the vending machine first described with reference to Figs. 1 to 5 inclusive, where these mechanism parts were omitted for the clear illustration of the features of the invention without further amplifying the drawings with additional figures. It may be further noted of the vending machine shown in Figs. 6 and 7 that this machine is provided with an upper wall bracket 72 firmly and rigidly secured by means of screws to the wall 71 and having an outwardly and upwardly projecting bracket arm 73 over the free vertical upper end of which there removably fits a rearwardly projecting apertured lug 74 carried by the magazine top 65 and shown as cast thereon. This upper bracket 72 serves as a strengthening brace and renders it necessary that the magazine chamber as well as the coin chamber shall be unlocked in order to permit the base bracket 22 to slide horizontally out of the supporting wall bracket 24 in removing the machine from the latter bracket. While this upper wall bracket 72 has not been shown in Figs. 1 to 5 inclusive, it is evident that it could be similarly employed with the vending machine there illustrated if so desired. This feature of the upper wall bracket is included in the disclosed subject matter of my earlier copending application for patent Serial No. 127,832, filed August 7, 1926.

It will now be manifest that the invention may be practically carried out and its objects effectively accomplished by means of either of the hereinbefore described vending machine constructions shown in the drawings. It is to be noted and attention is directed to the fact that the features of invention in both of these machines may be readily applied to and combined in a single vending machine construction. For example, the features of the invention shown in Figs. 6 and 7 may be employed in the vending machine construction shown in Figs. 1 to 5 inclusive, there to be supplemental to and to cooperate with the features of the invention there shown. For accomplishing this result, the locking shaft or tie rod 13 (Fig. 1) could be anchored or fixed in the coin chamber and to its side wall 1 by means of the same or substantially the same construction shown for this purpose in Fig. 6 for the tie rod 61, thus likewise in Fig. 1 to prevent the removal of the tie rod 13 until access had been had to the locked coin chamber. In such case an upper lock like the lock 67 in Fig. 6 would be applied to the upper end of the tie rod 13. The magazine replenisher would then have a key for this upper or magazine lock only. Both of the lower locks 15 and 55 would then become exclusively locks for the money pan, thereby affording augmented security against unauthorized access to the coin chamber, and the coin collecter would have keys for both of such money pan locks.

It is obvious that various modifications in construction may be made in the vending machines shown in the drawings as embodiments of the invention and which have been above particularly described, within the principle and scope of the invention as defined in the appended claims.

I claim:

1. In a vending machine construction, the combination of a lower casing part having an enclosing side wall closed at its upper end, an openable closure for the lower end of said casing part forming a coin receptacle, a lock to prevent the unauthorized opening of said closure, a wall bracket forming a support for the casing, a bracket-engaging member fixedly carried by the side wall of said casing part to have detachable engagement with the wall bracket, manually releasable means unreleasable prior to the opening of said closure and engageable with the wall bracket to prevent the unauthorized disengagement of said member therefrom, a magazine casing part closed at its top removably supported upon and closed at its bottom by the closed upper end of the said lower casing part, and means including a lock for separably securing the magazine casing part upon the lower casing part to provide for the replenishing of the magazine while the coin-receiving closure for the lower casing part remains in locked condition.

2. A vending machine casing construction comprising a lower chamber having an enclosing side wall closed at its upper end, a downwardly opening closure for the lower end of said chamber forming a coin receptacle, a magazine chamber closed at its top removably supported upon and closed at its bottom by the closed upper end of said lower chamber, releasable securing means including a tie rod extending vertically through the interior of the casing to engage the bottom closure of the lower chamber and the top closure of the magazine chamber, a lock for releasably engaging one end of the tie rod to prevent unauthorized access to the magazine chamber, and releasable securing means individual to the bottom closure of the lower chamber including a lock to prevent the unauthorized opening of the latter closure.

3. A vending machine construction comprising a lower chamber having an enclosing side wall closed at its upper end, a downwardly opening closure for the lower end

of said chamber forming a coin receptacle, a magazine chamber closed at its top removably supported upon and closed at its bottom by the closed upper end of said lower chamber, releasable securing means including a tie rod extending vertically through the interior of the casing to engage the bottom closure of the lower chamber and the top closure of the magazine chamber, a lock for releasably engaging one end of the tie rod to prevent unauthorized access to the magazine chamber, releasable securing means individual to the bottom closure of the lower chamber including a lock to prevent the unauthorized opening of the latter closure, and manually releasable means for separably securing the casing as a whole to a support and which can be released only when the bottom closure of the lower chamber is opened.

4. A vending machine casing construction comprising a lower casing part forming a coin chamber having an enclosing side wall closed at its upper end, a downwardly opening closure for the lower end of the coin chamber forming a coin receptacle, an upright upper casing part forming a magazine chamber closed at its top removably supported upon and closed at its bottom by the closed upper end of the coin chamber, releasable securing means to hold the bottom of the coin chamber closed and to hold the magazine chamber in closed condition upon the coin chamber, such securing means comprising a tie rod connected at its upper end to the top closure of the magazine and extending downward through the interior of the casing to the bottom closure of the coin chamber, and a lock for releasably holding together the lower end of the tie rod and the bottom closure of the coin chamber so that thereby the tie rod may remain in place in the machine when the lock is unlocked and when the coin chamber is opened.

5. In a vending machine construction, the combination of a casing part having an enclosing side wall closed at its upper end, a downwardly opening closure for the lower end of said casing part forming a coin receptacle, releasable securing means including a lock to prevent the unauthorized opening of said closure, a wall bracket to support said casing part and provided with a guideway, a bracket-engaging member fixedly carried by said casing part to have therewith removable sliding engagement with the guideway of the wall bracket, and manually releasable securing means to prevent the unauthorized disengagement of said member from the wall bracket comprising a releasable device which locks said member to the wall bracket against sliding disengagement therefrom and which is accessible for release only from within said casing part after the lock has been unlocked and the closure opened.

6. In a vending machine construction, the combination of a casing part having an enclosing side wall closed at its upper end, a downwardly opening closure for the lower end of said casing part forming a coin receptacle, releasable means including a lock to prevent the unauthorized opening of said closure, a wall bracket to support said casing part and provided with a guideway, a bracket-engaging member fixedly carried by said casing part to have therewith removable sliding engagement with the guideway of the wall bracket, and a longitudinally movable locking pin exposed at its inner end within said casing part and projecting outwardly through said member into engagement with the wall bracket to prevent the unauthorized disengagement of said casing part from the wall bracket and which can be withdrawn out of engagement with the wall bracket only from within said casing part after the lock has been unlocked and the closure opened.

7. A vending machine casing construction including, in combination, a casing base part forming a coin chamber having an enclosing side wall closed at its upper end, a reinforcing bracket at the inner side of the side wall of the coin chamber, a base bracket at the outer side of said wall outward from said reinforcing bracket, means for rigidly securing the said brackets together through said wall, a wall bracket having a guideway with which the base bracket has removable sliding engagement for thereby supporting the casing as a whole, an inwardly headed locking screw passing outwardly through both of said brackets and at its outer end engageable with the wall bracket to prevent the unauthorized removal of the machine therefrom, a downwardly opening closure for the lower end of the coin chamber forming a coin receptacle, and releasable securing means including a lock to prevent the unauthorized opening of said closure and which thereby prevents the unauthorized removal of the machine from the wall bracket.

8. In a casing construction for a vending machine, the combination of an upper closure for the casing to give access to the magazine for replenishing the latter, a lower closure for the casing to be opened to give access to the accumulated coins, means for separably securing the casing as a whole to a support which can be released only when the latter closure is opened, releasable securing means common to both of said closures including a single lock for locking both closures closed, and releasable securing means individual to the lower closure including a lock for locking the latter closure, whereby the magazine closure alone may be opened by unlocking the lock of the releasable securing means which is common to both of said closures and the lower clo-

sure can be opened only after both of said locks have been unlocked.

9. A vending machine casing construction comprising a lower casing part forming a coin chamber closed at its upper end, a downwardly opening closure for the lower end of the coin chamber forming a coin receptacle, an upright upper casing part forming a magazine chamber closed at its top removably supported upon and closed at its bottom by the closed upper end of the coin chamber, releasable securing means to hold the bottom of the coin chamber closed and to hold the magazine chamber in closed condition upon the coin chamber, such securing means comprising a tie rod extending vertically freely and loosely through the interior of the casing to engage the bottom closure of the coin chamber and the top closure of the magazine chamber, a lock for releasably engaging one end of the tie rod and whereby said lock will prevent unauthorized access to the coin chamber and to the magazine chamber, and further releasable securing means for and individual to the bottom closure of the coin chamber including a lock for the latter closure which further prevents unauthorized access to the coin chamber.

10. A vending machine construction comprising a lower casing part forming a coin chamber closed at its upper end, a downwardly opening closure for the lower end of the coin chamber forming a coin receptacle, an upright upper casing part forming a magazine chamber closed at its top removably supported upon and closed at its bottom by the closed upper end of the coin chamber, releasable securing means to hold the bottom of the coin chamber closed and to hold the magazine chamber in closed condition upon the coin chamber, such securing means comprising a tie rod extending vertically freely and loosely through the interior of the casing to engage the bottom closure of the coin chamber and the top closure of the magazine chamber, a lock for releasably engaging one end of the tie rod and whereby said lock will prevent unauthorized access to the coin chamber and to the magazine chamber, further releasable securing means for and individual to the bottom closure of the coin chamber including a lock for the latter closure which further prevents unauthorized access to the coin chamber, a wall bracket to form a support for the casing as a whole, a bracket-engaging member fixedly carried by the coin chamber to have detachable casing-supporting engagement with the wall bracket, and a releasable securing device carried by the coin chamber and engageable with the wall bracket to prevent the unauthorized disengagement of said member therefrom and with which both of said locks co-operate to prevent the unauthorized removal of the casing as a whole from the wall bracket.

11. A vending machine construction comprising a lower casing part forming a coin chamber having an enclosing side wall closed at its upper end, a downwardly opening closure for the lower end of the coin chamber forming a coin receptacle, an upright upper casing part forming a magazine chamber closed at its top removably supported upon and closed at its bottom by the closed upper end of the coin chamber, releasable securing means to hold the bottom of the coin chamber closed and to hold the magazine chamber in closed condition upon the coin chamber, such securing means comprising a tie rod extending vertically freely and loosely through the interior of the casing to engage the bottom closure of the coin chamber and the top closure of the magazine chamber, a lock for releasably engaging one end of the tie rod and whereby said lock will prevent unauthorized access to the coin chamber and to the magazine chamber, further releasable securing means for and individual to the bottom closure of the coin chamber including a lock for the latter closure which further prevents unauthorized access to the coin chamber, a wall bracket to support the casing as a whole, a bracket-engaging member fixedly carried by the side wall of the coin chamber to have detachable casing-supporting engagement with the wall bracket and a releasable securing device to prevent the unauthorized disengagement of said member from the wall bracket and releasable only from within the coin chamber so as to be accessible for release only when the coin chamber has been unlocked and opened.

12. A vending machine casing construction including, in combination, a casing base part forming a coin chamber having an enclosing side wall closed at its upper end, a removable money pan closing the bottom of said casing base part and closed thereby, a plurality of keeper studs rigidly carried by the casing base part and projecting downward within the money pan to adjacent the bottom thereof and provided at their lower ends with keeper abutments, a vertically undisplaceable horizontally rotatable locking member within the money pan to have locking engagement with said keeper abutments and to have unlocking disengagement therefrom, and a device including a lock operable only by an authorized person for imparting locking and unlocking movement to said locking member.

13. A vending machine casing construction including, in combination, a casing base part forming a coin chamber having an enclosing side wall closed at its upper end, a removable money pan closing the lower end of the coin chamber and closed thereby, a plurality of keeper studs rigidly carried by

the side wall of the coin chamber at the inner side thereof and projecting downwardly within the money pan adjacent to its bottom and there provided with upwardly directed abutments at the inner sides thereof, a peripherally notched locking disc forming an inner bottom for the money pan restrained against vertical movement and centrally pivoted on the bottom of the money pan to have peripheral locking engagement with the abutments of said studs and to be disengaged therefrom by rotative movement to bring said notches into alignment with said abutments, a rotatable cam at the inner side of the bottom of the money pan for imparting rotative locking and unlocking movements to said locking disc, and a key-operated lock mounted in the bottom of the money pan and having a rotatable part which at its inner end carries said cam to operate the latter.

14. A vending machine construction including, in combination, a casing base part forming a coin chamber having an enclosing side wall closed at its upper end, a removable money pan closing the lower end of the coin chamber and closed thereby, a pair of substantially similar homologous reinforcing brackets substantially oppositely arranged at the inner side wall of the coin chamber and each of said brackets having an aperture through it from its inner side outwardly, a base bracket at the outer side of said wall outwardly from one of said reinforcing brackets and having through it an aperture in alignment with said aperture in the adjacent reinforcing bracket, means for rigidly securing the said adjacent reinforcing bracket and the base bracket together through said wall, means for rigidly securing the other reinforcing bracket to said wall, a wall bracket having a guideway with which the base bracket has removable sliding engagement for thereby supporting the casing as a whole, a locking pin releasably secured in said apertures and engaging with the wall bracket to prevent the unauthorized removal of the machine from the wall bracket and which can be released and withdrawn from its engagement with the wall bracket only from within the coin chamber, whereby the base bracket and locking pin may cooperate interchangeably with the respective reinforcing brackets, a keeper stud rigidly carried by each of said reinforcing brackets and projecting downwardly within the money pan adjacent to its bottom and there provided with upwardly directed keeper abutments, a locking member within the money pan restrained against vertical movement and pivoted on the bottom of the money pan to have locking engagement with said keeper abutments and to be disengaged therefrom by rotative movement for thereby unlocking the money pan, and a device including a lock operable only by an authorized person for imparting locking and unlocking rotative movements to said locking member.

15. A vending machine construction comprising a casing base part forming a coin chamber having an enclosing side wall closed at its upper end, a removable money pan closing the lower end of the coin chamber and closed thereby, an upper casing part forming a magazine chamber closed at its top removably supported upon and closed at its bottom by the closed upper end of the coin chamber, releasable securing means to hold the bottom of the coin chamber closed and to hold the magazine chamber in closed condition upon the coin chamber, such securing means comprising a tie rod connected at its upper end to the top closure of the magazine and extending freely and loosely downward through the interior of the casing to the bottom of the money pan, a lock for releasably holding together the lower end of the tie rod and the bottom of the money pan thereby to hold the magazine chamber in place and to prevent unauthorized access to the money pan, further releasable securing means for the money pan comprising a pair of oppositely arranged reinforcing brackets fixedly carried by the side wall of the coin chamber at the inner side thereof, a keeper stud rigidly carried by each of said reinforcing brackets and projecting downwardly within the money pan adjacent to its bottom and there provided with upwardly directed keeper abutments, a locking member within the money pan restrained against vertical movement and pivoted on the bottom of the money pan to have locking engagement with said keeper abutments and to be disengaged therefrom by rotative movement, a device including a lock operable only by an authorized person for imparting locking and unlocking rotative movement to said locking member, a wall bracket provided with a guideway, a bracket-engaging member fixedly carried by the side wall of the coin chamber outwardly from one of said reinforcing brackets to have removable sliding engagement with the guideway of the wall bracket for supporting the machine thereon, and means to prevent the unauthorized removal of the machine from the wall bracket comprising a locking pin projecting from the inside of the coin chamber outwardly through the adjacent reinforcing bracket and the base bracket into locking engagement with the wall bracket and accessible to be disengaged from the latter from within the coin chamber only.

16. A vending machine construction comprising a casing base part forming a coin chamber having an enclosing side wall closed at its upper end, a removable money pan closing the lower end of the coin chamber

and closed thereby, an upper casing part forming a magazine chamber closed at its top removably supported upon and closed at its bottom by the closed upper end of the coin chamber, a tie rod headed above the top of the magazine chamber and extending freely and loosely downwardly through the interior of the cas ng to the bottom of the money pan, a lock for releasably holding together the lower end of the tie rod and the bottom of the money pan thereby to prevent unauthorized access to the magazine chamber and to the coin chamber, a plurality of keeper studs rigidly carried by the side wall of the coin chamber at the inner s de thereof and projecting downwardly within the money pan adjacent to its bottom and there provided with upwardly directed keeper abutments, a locking member within the money pan restrained against vert cal movement and pivoted on the bottom of the money pan to have locking engagement with said keeper abutment and to be disengaged therefrom by rotative movement, a rotatable operating member at the inner side of the bottom of the money pan engageable with said locking member for imparting rotative locking and unlocking movements thereto, and a lock to be operated only by an authorized person and having a rotatable part which at its inner end carries said operating member for rotating the latter, whereby when said lock for the tie rod is unlocked access may be had to the magazine chamber only and both of said locks prevent unauthorized access to the coin chamber.

17. A vending machine construction comprising a coin chamber having an enclosing side wall closed at its upper end, a removable money pan forming a bottom closure for the lower end of the coin chamber, a magazine chamber closed at its top removably supported upon and closed at its bottom by the closed upper end of the coin chamber, releasable securing means to hold the money pan in closed condition on the bottom of the coin chamber and to hold the magazine chamber in closed condition upon the coin chamber, such securing means comprising a tie rod extending vertically through the mach ne from the top of the magazine chamber to the bottom of the money pan, means unreleasable from outside the coin chamber for holding the tie rod in place in fixed position in the latter chamber, a lock for releasably holding together the lower end of the tie rod and the bottom of the money pan to prevent unauthorized access to the coin chamber, and a lock for releasably holding together the upper end of the t e rod and the top closure of the magazine to prevent unauthorized access to the magazine chamber and which when unlocked permits access to the magazine chamber only for replenishing the latter.

18. A vending machine construction comprising a coin chamber having an enclosing side wall closed at its upper end, a removable money pan forming a bottom closure for the lower end of the coin chamber, a magazine chamber closed at its top removably supported upon and closed at its bottom by the closed upper end of the coin chamber, a tie rod extending vertically through the mach ne from the top of the magazine chamber to the bottom of the money pan to hold the money pan in closed condition on the bottom of the coin chamber and to hold the magazine chamber in closed condition upon the coin chamber, means unreleasable from outside the coin chamber for holding the tie rod in place in fixed position in the latter chamber, a lock for releasably holding together the lower end of the tie rod and the bottom of the money pan to prevent unauthorized access to the coin chamber, a lock for releasably holding together the upper end of the tie rod and the top closure of the magazine to prevent unauthorized access to the magazine chamber and which when unlocked permits access to the magazine chamber only for replenishing the latter, a wall bracket provided with a guideway, a bracket-engaging member fixedly carried by the side wall of the coin chamber to have therewith sliding engagement with the wall bracket for thereby supporting the mach ne, and a releasable securing device for locking together the bracket-engaging member and the wall bracket and releasable only from within the coin chamber after the unlocking of the money pan thereby to prevent the unauthorized removal of the machine from the wall bracket.

19. A vending machine construction comprising a coin chamber having an enclosing side wall closed at its upper end, a removable money pan forming a bottom closure for the coin chamber and closed thereby, a magazine chamber closed at its top removably supported upon and closed at its bottom by the closed upper end of the coin chamber, a tie rod extending vertically through the interior of the machine between the top of the magazine chamber and the bottom of the money pan, a bracket fixed within the coin chamber and to which the tie rod is secured to hold the latter in place, a lock for releasably holding together the lower end of the tie rod and the bottom of the money pan to prevent unauthorized access to the coin chamber, and a lock for releasably holding together the upper end of the tie rod and the top of the magazine chamber to prevent unauthorized access to the magazine chamber and when unlocked providing access to the magazine chamber only.

In witness whereof, I hereunto subscribe my signature.

LOUIS H. MORIN.